

GALILEO'S EXPLORATION OF IO

T. V. Johnson
Jet Propulsion Laboratory, Caltech, Pasadena CA
tjohnson@jpltvj.jpl.nasa.gov/FAX 818 354 6256

Io has proved to be Galileo's most difficult, yet also most rewarding scientific target in the Jovian system. Initial plans for the prime mission called for just one close encounter, during the approach to Jupiter in 1995, in order to keep from subjecting the spacecraft to the high radiation levels at Io's distance from Jupiter. In 1995 problems with the tape recorder prevented the collection of high resolution remote sensing data although valuable recorded space physics data were obtained. During the rest of the prime mission, distant "Io campaign" data were taken, recording Io's volcanic, changing surface and discovering ubiquitous very high temperature volcanism. The extended phase of the mission, the Galileo Europa Mission (GEM), was planned to allow the possibility of recovering the high resolution remote sensing data lost in 1995 with two close Io flybys in October and November of 1999. Both these encounters, despite some radiation induced difficulties, were successful, giving us our first detailed look at this energetic satellite. If the spacecraft remains operational, at least one more Io encounter is planned in early 2000. This work was done at the Jet Propulsion Laboratory, Caltech, under a contract ~~from~~ with NASA.

GALILEO'S EXPLORATION OF IO

T. V. Johnson

Jet Propulsion Laboratory, Caltech, Pasadena CA

tjohnson@jpltvj.jpl.nasa.gov/FAX 818 354 6256

Io has proved to be Galileo most difficult, yet also most rewarding scientific target in the Jovian system. Initial plans for the prime mission called for just one close encounter, during the approach to Jupiter in 1995, in order to keep from subjecting the spacecraft to the high radiation levels at Io's distance from Jupiter. In 1995 problems with the tape recorder prevented the collection of high resolution remote sensing data although valuable recorded space physics data were obtained. During the rest of the prime mission, distant "Io campaign" data were taken, recording Io's volcanic, changing surface and discovering ubiquitous very high temperature volcanism. The extended phase of the mission, the Galileo Europa Mission (GEM), was planned to allow the possibility of recovering the high resolution remote sensing data lost in 1995 with two close Io flybys in October and November of 1999. Both these encounters, despite some radiation induced difficulties, were successful, giving us our first detailed look at this energetic satellite. If the spacecraft remains operational, at least one more Io encounter is planned in early 2000. This work was done at the Jet Propulsion Laboratory, Caltech, under a contract from NASA.